UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Joseph P. Krause	MATTIS, JASON E
Vedder Price Kaufman & Kammholz	

ART UNIT	PAPER NUMBER
2665	

Joseph P. Krause
Vedder Price Kaufman & Kammholz
222 N. LaSalle Street
Chicago, IL 60601

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/692,884	OWENS ET AL.
	Examiner	Art Unit
	Jason E Mattis	2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

  a)☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5*.

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

Claim Objections

1.   Claim 1 is objected to due to the following informalities: Line 4 of claim 1 states

"said source switch." There is no antecedent basis for "said source switch."

Line 5 of claim 1 states "said destination switch." There is no antecedent basis

for "said destination switch."

Line 8 of claim 1 states "said first switch." There is no antecedent basis for "said

first switch."

Appropriate correction is required.

2.   Claim 10 is objected to due to the following informalities: Line 4 of claim 1 states

"said source switch." There is no antecedent basis for "said source switch."

Line 5 of claim 1 states "said destination switch." There is no antecedent basis

for "said destination switch."

Line 8 of claim 1 states "said first switch." There is no antecedent basis for "said

first switch."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Lines 3-4 of claim 5 states, "said first predetermined message establishing at least a protection path through said network." Lines 8-9 of claim 1, which claim 5 is dependent on, states, "said first predetermined message establishing at least a working path through said network." The limitation of claim 5 contradicts the previous limitation of claim 1.

5.   Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Lines 3-4 of claim 13 states, "said first predetermined message establishing at least a protection path through said network." Lines 8-9 of claim 10, which claim 13 is dependent on, states, "said first predetermined message establishing at least a working path through said network." The limitation of claim 13 contradicts the previous limitation of claim 10.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7.   Claims 1, 2, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Cao et al. (U.S. Application 09/318694).

With respect to claim 1, Cao et al. discloses a multi-protocol label switching

system comprised of a plurality of data switches, label switching routers, that are

interconnected by a plurality of data paths from a source node, LSR S, to a destination

node, LSR E, through a first set of data switches, LSR A and LSR B **(See paragraph 22**

and Figure 1 of Cao et al. for reference to an MPLS data network comprised of

label switching routers interconnected by paths). Cao et al. also discloses a

method within the MPLS data network of establishing a protection path from a source

switch, LSR S, to a destination switch, LSR E, through a second set of switches, LSR C

and LSR D **(See paragraph 24 and Figure 1 of Cao et al. for reference to switching**

to a secondary path when a primary path fails). Cao et al. further discloses sending

a first control message to establish a first working data path from a first switch, LSR S,

to a second switch, LSR E (**See paragraph 23 and Figure 1 of Cao et al. for**

reference to sending a router request downstream to request an explicitly routed

path between source LSR S and destination LSR E). Cao et al. also discloses

sending a second control message to establish a second protection data path from the

first switch, LSR S, to the second switch LSR E **(See paragraph 24 and Figure 1 of**

Cao et al. for reference to establish a secondary route between source LSR S and

destination LSR E). Cao et al. further discloses associating the first working path to

the protection path to enable protection switching **(See paragraph 24 and Figure 1 of**

Cao et al. for reference to enabling protection switching from the first data path to

a secondary data path in the event of a failure in the first data path).

With respect to claim 2, Cao et al. discloses that the step of sending a first

message is comprised of the step of adding a protection messaging field, which carries

protection pathway information between switching elements, to a label distribution

protocol message **(See column 24 and Figure 1 of Cao et al. for reference to using**

label distribution protocol to establish label switching paths to set up primary

and protection data paths).

With respect to claim 4, Cao et al. discloses that the step of sending a message

to establish at least working path between the first and second switches, LSR S and

LSR E, includes the step of identifying at least one data switch, LSR S, as a switch

element by the contents of at least one control field sent to at least one data switch,

LSR E, of the MPLS network **(See paragraph 23-24 and Figure 1 of Cao et al. for**

reference to LSR S using control fields sent through the network to LSR E to

request an explicitly routed path identifying itself as the source LSR).

With respect to claim 5, Cao et al. discloses that the step of sending a message

to establish at least a protection path between the first and second switches, LSR S and

LSR E, includes the step of identifying at least one data switch as a protection switch

element, LSR C and LSR D, by the contents of at least one control field sent to at least

one data, switch LSR E **(See paragraphs 23-24 and Figure 1 of Cao et al. for**

reference to LSR S using control fields to identify LSR C and LSR D as protection

switch elements and sending this control information through the network to LSR

E).

With respect to claim 7, Cao et al. discloses the first data path being set up loosely **(See paragraph 2 of Cao et al. for reference to prior art using loosely connected working and protection paths set up hop-by-hop)**.

With respect to claim 8, Cao et al. discloses the first data path being set up explicitly **(See paragraph 21 of Cao et al. for reference to explicitly setting up working and protection routing paths)**.

With respect to claim 9, Cao et al. discloses a step for mapping labels to data routed along the first data path according to predetermined criteria that includes the quality of service granted to the data **(See paragraph 53 and Figure 2 of Cao et al. for reference to mapping labels routed along the first path according to predetermined criteria including a type of service field, which includes quality of service information)**.

With respect to claim 10, Cao et al. discloses a multi-protocol label switching system comprised of a plurality of data switches, label switching routers, that are interconnected by a plurality of data paths from a source node, LSR S, to a destination node, LSR E, through a first set of data switches, LSR A and LSR B **(See paragraph 22 and Figure 1 of Cao et al. for reference to an MPLS data network comprised of label switching routers interconnected by paths)**. Cao et al. also discloses a method within the MPLS data network of establishing a protection path from a source switch, LSR S, to a destination switch, LSR E, through a second set of switches, LSR C and LSR D **(See paragraph 24 and Figure 1 of Cao et al. for reference to switching to a secondary path when a primary path fails)**. Cao et al. further discloses sending

a first control message to establish a first working data path from a first switch, LSR S,

to a second switch, LSR E **(See paragraph 23 and Figure 1 of Cao et al. for**

reference to sending a router request downstream to request an explicitly routed

path between source LSR S and destination LSR E).

With respect to claim 11, Cao et al. discloses that the step of sending a first

message is comprised of the step of adding a protection messaging field, which carries

protection pathway information between switching elements, to a label distribution

protocol message **(See column 24 and Figure 1 of Cao et al. for reference to using**

label distribution protocol to establish label switching paths to set up primary

and protection data paths).

With respect to claim 13, Cao et al. discloses that the step of sending a

message to establish at least a protection path between the first and second switches,

LSR S and LSR E, includes the step of identifying at least one data switch as a

protection switch element, LSR C and LSR D, by the contents of at least one control

field sent to at least one data, switch LSR E **(See paragraphs 23-24 and Figure 1 of**

Cao et al. for reference to LSR S using control fields to identify LSR C and LSR D

as protection switch elements and sending this control information through the

network to LSR E).

With respect to claim 14, Cao et al. discloses the first data path being set up

loosely **(See paragraph 2 of Cao et al. for reference to prior art using loosely**

connected working and protection paths set up hop-by-hop).

With respect to claim 15, Cao et al. discloses the first data path being set up explicitly **(See paragraph 21 of Cao et al. for reference to explicitly setting up working and protection routing paths)**.

With respect to claim 16, Cao et al. discloses a step for mapping labels to data routed along the first data path according to predetermined criteria that includes the quality of service granted to the data **(See paragraph 53 and Figure 2 of Cao et al. for reference to mapping labels routed along the first path according to predetermined criteria including a type of service field, which includes quality of service information)**.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cao et al. in view of Aukia et al. (U.S. Pat. 6594268).

With respect to claims 3 and 12, Cao et al. does not disclose that the step of sending a first message is comprised of the step of adding a protection messaging field, which carries protection pathway information between switching elements, to an MPLS reservation protocol message.

Aukia et al., in the field of communications, discloses a step of sending a first message comprised of the step of adding a protection messaging field, which carries

protection pathway information between switching elements, to an MPLS reservation protocol message **(See column 9 line 60 to column 10 line 47 and Figure 2 of Aukia et al. for reference to control messages using RSVP protocol, which are used to carry protection pathway information between network nodes)**. Using an MPLS reservation protocol message to carry protection pathway information between switching elements has the advantage of being able to share protection pathway information between network elements using the current MPLS protocol.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Aukia et al. to combine the use of an MPLS reservation protocol message of Aukia et al. with the MPLS protection path method of Cao et al., with the motivation being to be able to share protection pathway information between network elements using the current MPLS protocol.

10.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cao et al. in view of Lemieux (U.S. Pat. 6452942).

With respect to claim 6, Cao et al. does not specifically disclose a step of label binding the first message for the second switch to a third switch.

Lemieux, in the field of communications, discloses using label binding to distribute information to other label switches in a network **(See column 5 line 45 to column 6 line 4 of Lemieux for reference to using label binding to distribute information to other label switches in a network)**. Using label binding has the advantage of being able to explicitly map data to specific label switching paths.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Lemieux, to combine the label binding of Lemieux with the MPLS data network protection paths of Cao et al., with the motivation being to be able to explicitly map data to specific label switching paths.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shew et al. (U.S. Pat. 6530032) discloses a network fault recovery apparatus using MPLS. Andersson et al. (U.S. Pat. 6535481) discloses a system with network data routing protection cycles using MPLS. Kirby (U.S. Pat. 6647208) discloses a quick alternate path recovery system using MPLS.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E Mattis whose telephone number is (703) 305-8702. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703) 305-4798. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

RICKY NGO
PRIMARY EXAMINER

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